

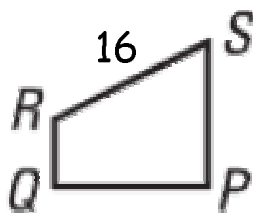
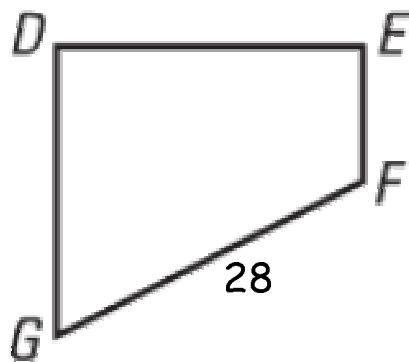
01/10/14 Agenda

- Review Homework
 - Worksheet 5- Similar Polygons & Scale Factors
- Section 6.3 day 2 - Using Similar Polygons
- Homework
 - Worksheet 6 - Solve for Missing Sides in Similar Polygons

Warm Up - Homework out

What is the scale factor between these two similar figures?

$DEFG \sim PQRS$



$$\frac{16}{28} = \frac{4}{7}$$

$$\frac{28}{16} = \frac{7}{4}$$

Section 6.3 - Use Similar Polygons

Target 6D

January 10, 2014

Goal:	Solve for the missing sides in similar polygons. -----
Today's Takeaways:	1. Solve for missing sides in similar polygons.
SWBAT	

Section 6.3 - Use Similar Polygons

Target 6D

January 10, 2014

Goal 1. Solve for missing sides in similar polygons.

Recall from yesterday:

In Similar Polygons:

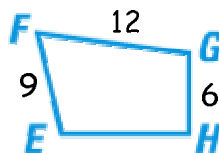
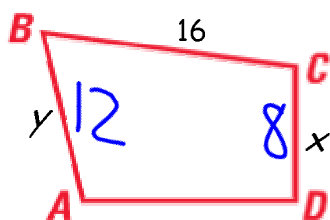
- All the corresponding angles are congruent.
- All the corresponding sides are proportional.
- Scale Factor is the ratio of 2 corresponding sides.

Additional property:

In Similar Polygons **ALL** corresponding lengths are proportional. This includes side lengths, altitudes, medians, midsegments, etc.

Solve for Missing Sides in Similar Polygons:

Example: $ABCD \sim EFGH$, find x and y .



$ABCD \sim EFGH$

$$SF = \frac{16}{12} = \frac{4}{3}$$

$$\frac{CD}{GH} = \frac{4}{3} = \frac{x}{6}$$

Steps to solve:

1. Find the scale factor.
2. Write a proportion between the scale factor and the missing value.
3. Solve the proportion.

$$\frac{BA}{FE} = \frac{4}{3} = \frac{y}{9}$$

$$3y = 4 \cdot 9$$

$$3y = 36$$

$$y = 12$$

$$3x = 4 \cdot 6$$

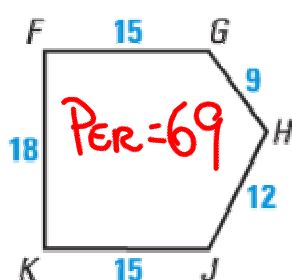
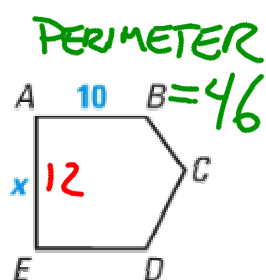
$$3x = 24$$

$$x = 8$$

Section 6.3 - Use Similar Polygons

Target 6D

January 10, 2014



1. Find the value of x.

2. Find the perimeter of ABCDE.

$$\frac{AB}{FG} = \frac{10}{15} = \frac{2}{3} \quad \text{SCALE FACTOR}$$

$$\frac{P_s}{P_L} = \frac{2}{3} = \frac{x}{69}$$

$$3x = 2 \cdot 69$$

$$3x = 138 \quad x = 46$$

$$\frac{AE}{FK} = \frac{2}{3} = \frac{x}{18}$$

$$3x = 2 \cdot 18$$

$$3x = 36$$

$$x = 12$$

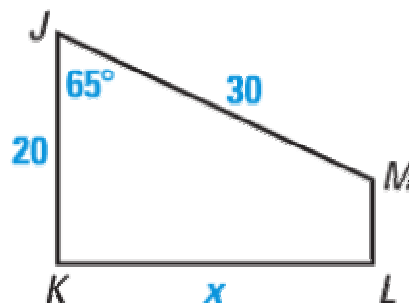
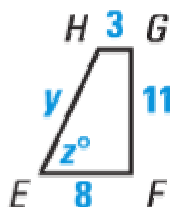
Section 6.3 - Use Similar Polygons

Target 6D

January 10, 2014

In the diagram, $JKLM \sim EFGH$.

Find the values of x , y , and z .



Section 6.3 - Use Similar Polygons

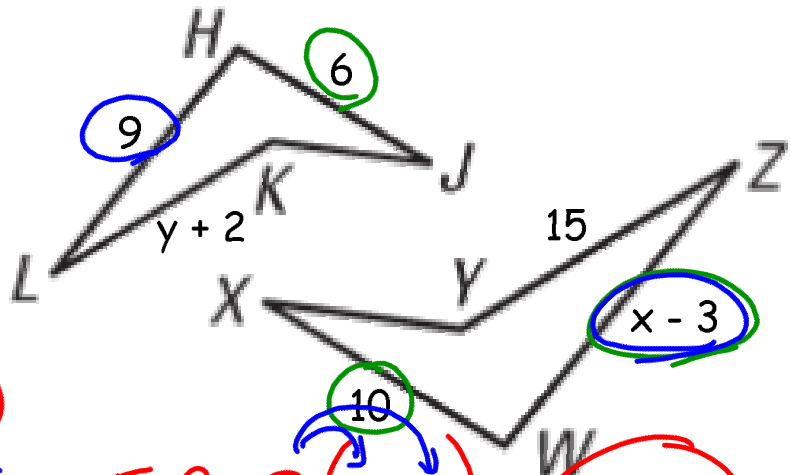
Target 6D

January 10, 2014

$$HJKL \sim WXYZ$$

Find the values of x & y .

$$SF = \frac{6}{10} = \frac{3}{5}$$



$$\frac{HL}{ZW} = \frac{3}{5} = \frac{9}{(x-3)}$$

$$5 \cdot 9 = 3(x-3)$$

$$45 = 3x - 9$$

$$\begin{array}{r} 45 \\ +9 \\ \hline 54 \end{array} = \begin{array}{r} 3x \\ -9 \\ +9 \\ \hline 3x \end{array}$$

$$18 = x$$

$$x = 18$$